

Abstract

Optical electrophotoconductor drums and electrophotoconductive tubes obtained via a direct chill metal casting apparatus for continuous or semi-continuous casting of metal (DC casting). In particular, casting of ingots of aluminum which provide the electrophotoconductive tubes that are subsequently coated to produce drums for copier and printers is presented. A gas-slip prepared surface of the tube results in a reduced and limited size and number of defects of an aluminum alloy material wherein the defects arise from a casting, subsequent extrusion, and subsequent drawing process. The defects arise primarily from either feather line lamination defects or from weld-line defects where the lamination defects are characterized by at least a slightly rougher surface and often a different chemical composition than that of the aluminum alloy at one point in the feather line lamination and where the weld-line defects occur in the extrusion process from contaminants present in either an aluminum casted ingot or log. Preparation of the special surface for the subsequently coated optical photoconductive drum results in increased yield, higher quality and lower manufacturing costs.